

**Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382**

**AIR QUALITY PERMIT
Issued under 401 KAR 52:040**

Permittee Name: Chesapeake Appalachia, LLC
Mailing Address: 900 Pennsylvania Avenue, Charleston, WV 25362

Source Name: Johns Creek Compressor Station
Mailing Address: Johns Creek, Van Lear, KY 41265

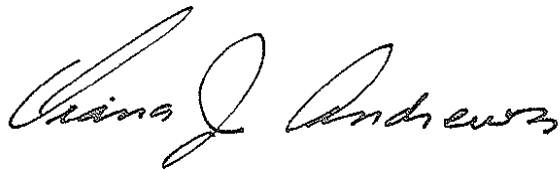
Source Location: Approximately 1 mile north of the intersection of State Route 194 and US Route 119, approximately 9 miles north of the city of Pikeville

Permit ID: S-08-034
Agency Interest #: 44044
Activity ID: APE20080001
Review Type: Minor Source, Operating
Source ID: 21-195-00256

Regional Office: Hazard Regional Office
233 Birch Street, Suite 2
Hazard, KY 41701
(606) 435-6022

County: Pike

Application
Complete Date: April 17, 2008
Issuance Date: June 2, 2008
Revision Date: N/A
Expiration Date: June 2, 2018



**John S. Lyons, Director
Division for Air Quality**

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first submitting a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:040, State-origin permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining other permits, licenses, or approvals that may be required by the Cabinet or other federal, state, or local agencies.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

Emission Unit 01 (E01R) Engine	Description
Type of Unit (Model)	Caterpillar G3508 LE
Construction Date	Proposed replacement in 2008
Kind of Unit	Pipe Line Compressor Engine: Reciprocating engine, 4-cycle lean burn
Fuel Input	5.17 mmBtu/hr
Power Output	670 hp
Primary Fuel	Natural Gas (Percent Sulfur < 1 gr/100 cf estimated)
Control Option	Oxidation Catalyst *

* Engine is equipped with a low emissions kit and oxidation catalyst. Both are integral parts of the engine and cannot be bypassed.

APPLICABLE REGULATIONS:

- 401 KAR 63:020, *Potentially hazardous matter or toxic substances*, is applicable to the reciprocating engine which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.
- 40 CFR 63 Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, is applicable to the reciprocating engine which is constructed after June 12, 2006. An affected source that is a new or reconstructed stationary reciprocating internal combustion engines (RICE) located at an area source must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart JJJJ, for spark ignition engines. [40 CFR 63.6590(c)] No further requirements apply for such engines under 40 CFR 63 Subpart ZZZZ.
- 40 CFR 60 Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE)*, is applicable to the reciprocating engine by meeting the requirements of 40 CFR 63 Subpart ZZZZ, 40 CFR 63.6590(c), even though this engine is a lean burn engine less than 1,350 hp with a manufacture date of 10/2007.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

NON-APPLICABLE REGULATIONS:

401 KAR 51:150, *NO_x requirements for stationary internal combustion engines*, is not applicable to the reciprocating engine since this engine is not a large NO_x SIP Call engine as defined in 401 KAR 51:150 Section 1.

1. Operating Limitations:

- a. The permittee shall provide the utmost care and consideration, in the handling of hazardous matter or toxic substances, to the potentially harmful effects of the emissions resulting from such activities. [401 KAR 63:020 Section 3]
- b. After July 1, 2009, the permittee may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in 40 CFR 60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in 40 CFR requirements in 40 CFR 60.4233 may not be installed after January 1, 2010. [40 CFR 60.4236(b)]

Compliance Demonstration Method:

- a. Refer to Section C.3.a, *Reporting Requirements*, for any malfunctions while operating the unit. Compliance with 401 KAR 63:020 is demonstrated while burning natural gas at the designed maximum capacity of the unit. If the unit is modified, modeling of air toxics may be required.
- b. The permittee shall keep records that the unit was installed before January 1, 2010.

2. Emission Limitations:

The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. [401 KAR 63:020 Section 3]

Compliance Demonstration Method:

Compliance with 401 KAR 63:020 is demonstrated while burning natural gas at the designed maximum capacity of the unit.

3. Testing Requirements:

Pursuant to 401 KAR 50:045 Section 1, performance testing using the Reference Methods specified in 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

4. Monitoring Requirements:

Refer to Section C, *General Conditions*.

5. Recordkeeping Requirements:

- a. Refer to Section C, *General Conditions*.
- b. Pursuant to 40 CFR 60.4245(a), the permittee shall keep records of maintenance conducted on the engine.

6. Reporting Requirements:

Refer to Section C, *General Conditions*.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 02 TEG Dehydration Unit	Description
Type of Unit	TEG Reboiler (RBL) TEG Dehydrator Still Vent (DHY)
Construction Date	01/2004
Kind of Unit	Indirect Heat Exchanger
Fuel Input	0.2 mmBtu/hr
Primary Fuel	Natural Gas (Percent Sulfur < 1 gr/100 cf estimated)
Control Option	None

APPLICABLE REGULATIONS:

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, is applicable to the TEG dehydration unit (TEG Reboiler and TEG Dehydrator Still Vent) which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.

40 CFR 63 Subpart HH, *National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities*. The existing glycol dehydrator is not located within 2 miles of an urban area or urban cluster and is not subject to the general standards as required in 40 CFR 63.764(d) for minor source TEG dehydrators because its benzene emissions are less than 1 tpy, except that the records of the determination must be maintained as required in 40 CFR 63.774(d)(1).

NON-APPLICABLE REGULATIONS:

401 KAR 59:015, *New indirect heat exchangers*, is not applicable to the TEG Reboiler since this indirect heat exchanger has a heat input capacity of less than one (1) mmBtu per hour.

40 CFR 60 Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, is not applicable to the TEG Reboiler for which construction, modification, or reconstruction is commenced after June 9, 1989 since a maximum design heat input capacity is less than 2.9 MW (10 mmBtu/hr).

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

1. Operating Limitations:

- a. The permittee shall provide the utmost care and consideration, in the handling of hazardous matter or toxic substances, to the potentially harmful effects of the emissions resulting from such activities. [401 KAR 63:020 Section 3]
- b. The permittee is exempt from the requirements of 40 CFR 63.764(d) if the criteria listed in Subsection 1(1) or (2) below are met, except that the records of the determination of these criteria must be maintained as required in 40 CFR 63.774(d)(1). [40 CFR 63.764(e)(1)]
 - (1) The actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in 40 CFR 63.772(b)(1); or
 - (2) The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year, as determined by the procedures specified in 40 CFR 63.772(b)(2).

Compliance Demonstration Method:

Refer to Section C.3.a, *Reporting Requirements*, for any malfunctions while operating the unit. Compliance with 401 KAR 63:020 is demonstrated while burning natural gas at the designed maximum capacity of the unit. If the unit is modified, modeling of air toxics may be required.

2. Emission Limitations:

The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. [401 KAR 63:020 Section 3]

Compliance Demonstration Method:

Compliance with 401 KAR 63:020 is demonstrated while burning natural gas at the designed maximum capacity of the unit.

3. Testing Requirements:

Pursuant to 401 KAR 50:045 Section 1, performance testing using the Reference Methods specified in 401 KAR 50:015 shall be conducted as required by the Division.

4. Monitoring Requirements:

Refer to Section C, *General Conditions*.

5. Recordkeeping Requirements:

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- a. Refer to Section C, *General Conditions*.
- b. Pursuant to 40 CFR 63.774(d)(1), the permittee of a glycol dehydration unit that meets the exemption criteria in 40 CFR 63.764(e)(1)(i) or (ii) shall maintain the records specified in Subsection 5(1) or (2), as appropriate, for that glycol dehydration unit.
 - (1) The actual annual average natural gas throughput (in terms of natural gas flowrate to the glycol dehydration unit per day) as determined in accordance with 40 CFR 63.772(b)(1), or
 - (2) The actual average benzene emissions (in terms of benzene emissions per year) as determined in accordance with 40 CFR 63.772(b)(2).

6. Reporting Requirements:

Refer to Section C, *General Conditions*.

SECTION C - GENERAL CONDITIONS

1. Administrative Requirements

- a. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:040, Section 3(1)(b) and is grounds for enforcement action including but not limited to the termination, revocation and reissuance, or revision of this permit.
- b. This permit shall remain in effect for a fixed term of ten (10) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division. [401 KAR 52:040, Section 15]
- c. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit. [Section 1a-11 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23]
- d. Pursuant to materials incorporated by reference by 401 KAR 52:040, this permit may be revised, revoked, reopened, reissued, or terminated for cause. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance shall not stay any permit condition. [Section 1a-4, 5, of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23]
- e. This permit does not convey property rights or exclusive privileges. [Section 1a-8 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23]
- f. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance. [401 KAR 52:040 Section 11(3)]
- g. This permit shall be subject to suspension at any time the permittee fails to pay all fees within 90 days after notification as specified in 401 KAR 50:038, Air emissions fee. The permittee shall submit an annual emissions certification pursuant to 401 KAR 52:040, Section 20.

2. Recordkeeping Requirements

- a. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of at least five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality. [401 KAR 52:040 Section 3(1)(f) and Section

SECTION C - GENERAL CONDITIONS (CONTINUED)

1b-IV-2 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23]

- b. The permittee shall perform compliance certification and recordkeeping sufficient to assure compliance with the terms and conditions of the permit. Documents, including reports, shall be certified by a responsible official pursuant to 401 KAR 52:040, Section 21.

3. Reporting Requirements

- a. (1) In accordance with the provisions of 401 KAR 50:055, Section 1, the permittee shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
 - i. When emissions during any planned shutdowns and ensuing startups will exceed the standards, notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 - ii. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall be submitted in writing upon request.
- (2) The permittee shall promptly report deviations from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Reporting Requirement condition a.(1) above), the probable cause of the deviation, and corrective or preventive measures taken; to the Regional Office listed on the front of this permit within 30 days. Other deviations from permit requirements shall be included in the semiannual report. [Section 1b-V-3 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23]
- b. The permittee shall furnish information requested by the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with the permit. [Section 1a-6 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23]
- c. Summary reports of monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation. The summary reports are due January 30th and July 30th of each year. All deviations from permit requirements shall be clearly identified in the reports. All reports shall be certified by a responsible official pursuant to 401 KAR 52:040, Section 21.

SECTION C - GENERAL CONDITIONS (CONTINUED)**4. Inspections**

In accordance with the requirements of 401 KAR 52:040, Section 3(1)(f) the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times. Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency:

- a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation.
- b. To access and copy any records required by the permit.
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit.
- d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.

5. Emergencies/Enforcement Provisions

- a. The permittee shall not use as defense in an enforcement action, the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance. [Section 1a-3 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23]
- b. An emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
 - (1) An emergency occurred and the permittee can identify the cause of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - (4) The permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division within two working days after the time when emission limitations were exceeded due to the emergency and included a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
- c. Emergency provisions listed in General Condition 5.b are in addition to any emergency or upset provision contained in an applicable requirement. [401 KAR 52:040, Section 22(1)]
- d. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [401 KAR 52:040, Section 22(2)]

SECTION C - GENERAL CONDITIONS (CONTINUED)**6. Compliance**

- a. Periodic testing or instrumental or non-instrumental monitoring, which may consist of record keeping, shall be performed to the extent necessary to yield reliable data for purposes of demonstration of continuing compliance with the conditions of this permit. For the purpose of demonstration of continuing compliance, the following guidelines shall be followed:
- (1) Pursuant to 401 KAR 50:055, General compliance requirements, Section 2(5), all air pollution control equipment and all pollution control measures proposed by the application in response to which this permit is issued shall be in place, properly maintained, and in operation at any time an affected facility for which the equipment and measures are designed is operated, except as provided by 401 KAR 50:055, Section 1.
 - (2) All the air pollution control systems shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers. A log shall be kept of all routine and nonroutine maintenance performed on each control device. Daily observations are required during daylight hours of all operations, control equipment and any visible emissions to determine whether conditions appear to be either normal or abnormal. If the operations, controls and/or emissions appear to be abnormal, the permittee must then comply with the requirements of Section C – General Conditions, 3.a.(2), of this permit.
 - (3) A log of the monthly raw material consumption and monthly production rates shall be kept available at the facility. Compliance with the emission limits may be demonstrated by computer program, spread sheets, calculations or performance tests as may be specified by the Division [401 KAR 50:055, Section 2].
- b. Pursuant to 401 KAR 52:040, Section 19, the permittee shall certify compliance with the terms and conditions contained in this permit by January 30th of each year, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an approved alternative) to the Regional Office listed on the front of this permit in accordance with the following requirements:
- (1) Identification of the term or condition;
 - (2) Compliance status of each term or condition of the permit;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The method used for determining the compliance status for the source, currently and over the reporting period, and
 - (5) For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.
 - (6) The certification shall be postmarked by January 30th of each year. Annual compliance certifications shall be mailed to the following addresses:
- | | |
|---------------------------|--------------------------|
| Division for Air Quality | Division for Air Quality |
| Hazard Regional Office | Central Files |
| 233 Birch Street, Suite 2 | 803 Schenkel Lane |
| Hazard, KY 41701 | Frankfort, KY 40601-1403 |

SECTION C - GENERAL CONDITIONS (CONTINUED)

- c. Permit Shield - A permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of this permit shall be considered compliance with all:
 - (1) Applicable requirements that are included and specifically identified in this permit; or
 - (2) Non-applicable requirements expressly identified in this permit [401 KAR 52:040, Section 11].

7. Construction Requirements:

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the construction of the equipment described herein, Emission Unit 01 (E01R) Engine in accordance with the terms and conditions of this permit.

- a. Pursuant to 401 KAR 52:040, Section 12(3), unless construction is commenced on or before 18 months after the date of issuance of this permit, or if construction is commenced and then stopped for any consecutive period of 18 months or more, or is not completed within a reasonable timeframe, then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon a written request, the Cabinet may extend these time periods if the source shows good cause.
- b. Pursuant to 401 KAR 52:040, Section 12(4)(a) and 401 KAR 59:005, General provisions, Section 3(1), within 30 days following construction commencement, within 15 days following start-up and attainment of maximum production rate, or within 15 days following the issuance date of this permit, whichever is later, the owner and/or operator of the affected facilities specified on this permit shall furnish to the Regional Office listed on the front of this permit, with a copy to the Division's Frankfort Central Office, the following:
 - (1) Date when construction commenced.
 - (2) Start-up date of each of the affected facilities listed on this permit.
 - (3) Date when maximum production rate was achieved.
- c.
 - (1) Pursuant to 401 KAR 59:005, General provisions, Section 2(1), this permit shall allow time for the initial start-up, operation and compliance demonstration of the affected facilities listed herein. However, within 60 days after achieving the maximum production rate at which the affected facilities will be operated, but not later than 180 days after initial start-up of such facilities, the owner or operator shall demonstrate compliance to a duly authorized representative of the Division for Emission Unit 01.
 - (2) Pursuant to 401 KAR 59:005, General provisions, Section 3(1)(b), unless notification and justification to the contrary are received by this Division, the date of achieving the maximum production rate at which the affected facilities will be operated shall be deemed to be 30 days after initial start-up.
- d. Operation of the affected facilities authorized by this permit shall not commence until compliance with applicable standards specified herein has been demonstrated in accordance with the requirements of 401 KAR 52:040, Section 12(4)(b). Until compliance is demonstrated, the source may only operate for the purpose of demonstrating compliance.

SECTION D - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:040, Section 6. Although these activities are designated as insignificant the permittee must comply with the applicable regulation. Process and emission control equipment at each insignificant activity subject to an opacity standard shall be inspected monthly and a qualitative visible emissions evaluation made. Results of the inspection, evaluation, and any corrective action shall be recorded in a log.

Description	Generally Applicable Regulation
T1 – 25 bbl engine oil tank	401 KAR 63:010
T2 – 12 bbl oil day tank	401 KAR 63:010
T3 – 47 bbl waste fluids tank	401 KAR 63:010
Equipment leaks	401 KAR 63:010